

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): A radio communication system ~~of claim 1~~,
comprising:

(a) a plurality of mobile stations;

(b) a plurality of base stations configured to generate a plurality of beam patterns in order to carry out a radio communication with each of the plurality of mobile stations; and

(c) a base station controller configured to assign a fixed channel to a group of mobile stations in order to carry out a radio communication with each mobile station of the group,

wherein the base station controller has a device configured to prevent beam patterns using the fixed channel from interfering with each other when communicating with each mobile station of the group,

and each of the plurality of mobile station stations is a mobile station running configured to run on a road, and at least a part of the plurality of base stations are arranged along the road.

Claim 3 (Canceled).

Claim 4 (Currently Amended): A radio base station controller ~~of claim 3~~, which is connected to a plurality of base stations configured to generate a plurality of beam patterns and controls an antenna installed in each of the base stations and composed of a plurality of

antenna devices in order to carry out a radio communication with a mobile station, the radio base station controller comprising:

- (a) an antenna controller configured to control the antenna; and
- (b) at least one modulating/demodulating device configured to modulate and demodulate a signal which is transmitted to and received from the mobile station,

wherein the antenna controller comprising:

a selector configured to select at least one of the antenna device devices from the plurality of base stations; and

a setter configured to set a weight of the at least one of the selected antenna device devices.

Claim 5 (Currently Amended): A radio base station controller ~~of claim 4,~~ which is connected to a plurality of base stations configured to generate a plurality of beam patterns and controls an antenna installed in each of the base stations and composed of a plurality of antenna devices in order to carry out a radio communication with a mobile station, the radio base station controller comprising:

- (a) an antenna controller configured to control the antenna; and
- (b) at least one modulating/demodulating device configured to modulate and demodulate a signal which is transmitted to and received from the mobile station,

wherein the antenna controller comprising:

a selector configured to select at least one of the antenna devices from the plurality of base stations; and

a setter configured to set a weight of the at least one of the antenna devices,

~~wherein and~~ the setter has a device configured to determine the weight of the antenna device so that ~~when a transmission or a reception is carried out to or from a different mobile station to which the same channel is assigned~~ fixed channels do not interfere with each other in case where the fixed channels assigned to different mobile stations are the same.

Claim 6 (Currently Amended): A radio base station controller ~~of claim 4,~~ which is connected to a plurality of base stations configured to generate a plurality of beam patterns and controls an antenna installed in each of the base stations and composed of a plurality of antenna devices in order to carry out a radio communication with a mobile station, the radio base station controller comprising:

- (a) an antenna controller configured to control the antenna; and
- (b) at least one modulating/demodulating device configured to modulate and demodulate a signal which is transmitted to and received from the mobile station,

wherein the antenna controller comprising:

a selector configured to select at least one of the antenna devices from the plurality of base stations; and

a setter configured to set a weight of the at least one of the antenna devices,

~~wherein and~~ the antenna controller further has a measuring device configured to measure respective reception strength of ~~[[the]]~~ respective antenna devices of the plurality of antenna devices in the plurality of base stations.

Claim 7 (Currently Amended): ~~A~~ The radio base station controller of claim 4, wherein the mobile station is ~~a mobile station running~~ configured to run on a road, and at least a part of the plurality of base stations are arranged along the road.

Claim 8 (Currently Amended): A radio base station controller which is connected to a plurality of base stations arranged along a road; and ~~then~~ controls the plurality of base stations, ~~and accordingly carries in order to carry out a radio communication with at least one mobile station~~ stations running on the road, the radio station controller comprising:

~~(a) a device configured to assign the same channel to each mobile station of the same speed or the same lane;~~

~~(b) a device configured to detect at least one of the speed and the lane of the mobile station; and~~

(a) a device configured to detect each speed and each lane of each of the mobile stations;

(b) a device configured to assign a channel to a group of the mobile stations running at same speed or on same lane of the road; and

~~(c) a device which when the speed or the lane of the mobile station is changed, configured to change~~ changes an assignment channel, in the channel in accordance with a change of the speed or a change of the lane after the change.

Claim 9 (Currently Amended): A ~~The~~ radio base station controller of claim 8, wherein a ~~communication~~ an interval of the radio communication is changed depending on the change of the speed of each of the mobile station ~~stations~~.

Claim 10 (Currently Amended): A radio mobile station which is connected to a plurality of base stations configured to generate a plurality of beam patterns; and carries out a

radio communication with a base station controller configured to ~~that can~~ control an antenna installed in each of the base stations ~~[[and]]~~ composed of a plurality of antenna devices,

wherein the radio mobile station transmits a signal ~~including at least information to~~ identify to the base station controller configured to follow the radio mobile station, even if there is ~~not a signal~~ no information to be transmitted to the base station controller.

Claim 11 (Currently Amended): A plurality of radio base station ~~controller~~ controllers ~~which is~~ connected to a plurality of base stations ~~arranged along a road, and then~~ and controls the plurality of base stations ~~and accordingly carries in order to carry out~~ a radio communication with at least one mobile station running on a ~~the~~ road,

~~wherein a boundary between radio base station controllers adjacent to each other is positioned in a portion in which a movement destination of the mobile station on the road can be pointed out.~~

wherein the base stations are arranged along the road and the plurality of base station controllers are configured to predict a positional range of a hand-over between the radio base station controllers and information to be transmitted to the mobile station is shared between the radio base station controllers adjacent to each other.

Claim 12 (Currently Amended): A radio communication system comprising:

(a) at least one mobile station having a device configured to select, from a plurality of same reception signals, a reception signal in which a reception state is better;

(b) a first base station controller having a device configured to detect a start of a communication between a predetermined first base station and a the mobile station, a device configured to request a hand-over process to the mobile station, and a device configured to

transfer a transmission signal to the mobile station to a second base station controller of a hand-over destination of the mobile station, the first base station controller connected to a first base station group including the predetermined first base station; ~~and,~~

~~(e) a~~ wherein the second base station controller ~~having~~ has a device configured to transmit the transmission signal transferred from the first base station controller, through a predetermined second base station to the mobile station, the second base station controller connected to a second base station group including the predetermined second base station.

Claim 13 (Currently Amended): ~~A~~ The radio communication system of claim 12, wherein the predetermined first and second base stations are arranged close to a boundary between the first and second base station controllers.

Claim 14 (Currently Amended): ~~A~~ The radio communication system of claim 12, wherein the mobile station is ~~a mobile station running~~ configured to run on a road, and at least a part of the first and second base station groups including the predetermined first and second base stations is positioned in a portion in which a movement destination of the mobile station on the road can be pointed out.

Claim 15 (Currently Amended): ~~A~~ The radio communication system of claim 14, wherein the first base station controller further comprises:
a device configured to detect a speed of the mobile station; and
a device configured to change the predetermined first base station, in accordance with the detected speed.

Claim 16 (Currently Amended): ~~A~~ The radio communication system of claim 14, wherein the first and second base station groups arranged along the road are arranged in a predetermined interval, and an interval between a first base station and a second base station which are the closest to each other is shorter than the predetermined interval.

Claim 17 (Currently Amended): ~~A~~ The radio communication system of claim 14, wherein the first and second base station controllers select an optimal transmission rate and error correction code in accordance with a speed of the mobile station when performing a hand-over process on the mobile station, and then carry out a transmission and a reception to and from the mobile station.

Claim 18 (Canceled).

Claim 19 (Currently Amended): A radio communication method comprising the steps of:

- (a) detecting a start of a communication between a predetermined first base station connected to a first base station controller and a mobile station running on a road;
- (b) requesting a hand-over process to the mobile station;
- (c) transferring to a second base station controller, a signal to be transferred through the predetermined first base station to the mobile station;
- (d) transmitting the signal to the mobile station through a predetermined second base station connected to the second base station controller; and
- (e) selecting a better signal in which a reception state is better, from two signals received by the mobile station, and

(f) predicting a positional range of a hand-over between the first and second radio base station controllers in advance

~~wherein the predetermined first and second base stations are arranged close to a boundary between the first and second base station controllers.~~

Claim 20 (Currently Amended): A radio communication method ~~of claim 19,~~
comprising the steps of:

(a) detecting a start of a communication between a predetermined first base station connected to a first base station controller and a mobile station running on a road;

(b) requesting a hand-over process to the mobile station;

(c) transferring to a second base station controller, a signal to be transferred through the predetermined first base station to the mobile station;

(d) transmitting the signal to the mobile station through a predetermined second base station connected to the second base station controller; and

(e) selecting a better signal in which a reception state is better, from two signals received by the mobile station,

wherein the predetermined first and second base stations are arranged close to a boundary between the first and second base station controllers,

~~wherein~~ and the first base station controller is connected to a first base station group including the predetermined first base station,

the second base station controller is connected to a second base station group including the predetermined second base station, and

at least a part of the first and second base station groups including the predetermined first and second base stations is arranged along a portion in which a movement destination of the mobile station on the road can be pointed out.